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X5 Face Lift

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X5 Face Lift

Model: E53

Production: Start of Production MY 2004

OBJECTIVES

After completion of this module you will be able to:

- Recognize the external changes to the X5
- Understand operation of the X-Drive
- Explain mechanical and electrical changes to the X5

X5 Updates

The X5 Face Lift includes both seen and unseen changes. A partial list of the X5 updates is as follows:

- N62 Engine available
- New Engine wiring harness
- New Driveshaft
- Updated emissions for the M54
- 150 Amp generator for the M54
- New wheel designs
- DXC
- New wheel speed sensors
- X Drive transfer case
- RPA
- New Steering Wheel
- New Transmissions
- Bi-Xenon Lights
- Redesigned Tail Lights
- New LCM
- Revised PDC
- New AC compressor
- New Telephone prep
- Redesigned Front End
- Panoramic Sunroof (after 04/04)
- New Colors
- New Interior Trim

Lights

New lighting features for the X5 FL include the following:

- Revised Front Headlights
- Redesigned Taillights

Front Headlights

The front headlights are all new. Both the High and Low beams are now free-form reflectors and no longer use glass lenses. The turn signal now has a clear lens housing, and the parking light uses the optical wave guide technology. Clear rings surround the High and Low beam reflectors.

Out put voltage for the light source module comes from the parking lamp final stage of the LCM IV.



Bi-Xenon

Bi-Xenon lights are optional in the X5 3.0i and standard in the 4.4i. Operation is the same as E46.

Taillights

The revised taillights include brake lights, running lights, rear fog lights, reverse and turn signal lights. Similar to the headlights, the lenses have been replaced with a clear lens. Taillight dimensions remain unchanged.



Tail light up to October 2003



Tail light X5 FL

LCM IV

Due to improvements in the LCM, the same LCM unit (IV) may be used for both the halogen and bi-xenon lights.

Check Control Messages

A modified CC message, Check Gas Cap, replaces the old Check Filler Cap.

PDC

Placement of the sensors has changed due to revisions of the front bumpers.

GM3RD

The GM3RD has been Redesigned to accommodate new functions in the X5 FL. While some pin assignments have changed, operation and diagnostics remain the same. New features of the GM3RD include:

- Revised software and hardware
- Adaptation of HW for Interior Lighting (IB) changes
- Additional Load Deactivation (VA2) to support peripheral control units
- Integration of Soft Close Actuator (SCA)

The primary reason for the redesign of the GM3 was to integrate a new microprocessor. Additionally, other hardware changes were also implemented requiring a new printed circuit board.

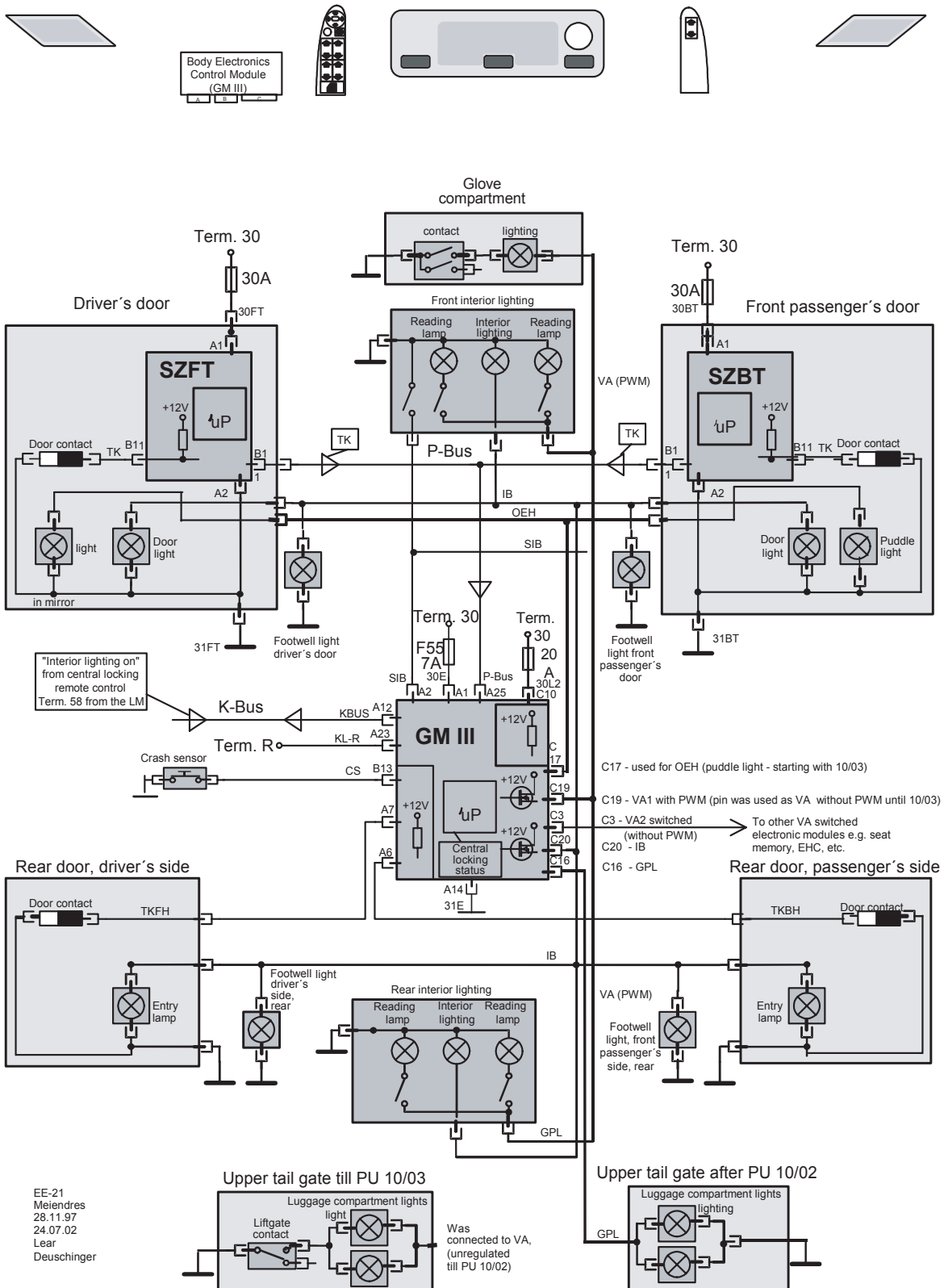
- Semiconductor control of lock activations (not relay)
- Integrated Optical Entry Assist (OEH)
- SCA
- Elimination of heat sink
- Pulse width modulated (PWM) signal for the interior lighting (IB), and reading lights supply line (VA)

Load Deactivation

Load Deactivation remains the same.

There are now two VA outputs from the GM3RD. VA1 is a PWM signal and VA2 is not PWM.

Interior Lighting Schematic



Softclose Actuator (SCA)

The softclose actuator system for the rear upper hatch is new for the E53 Facelift package. The purpose of the SCA system is to automatically pull the upper lift-gate fully closed once the customer lowers the hatch, and to automatically release the hatch once the opening process is initiated. The controlling function for the SCA is integrated into the GM3.

System Components

- SCA Assembly
 - Locking Pawls
 - Mechanical Components (Gears, springs, etc.)
 - Load Protection Device
 - Motor
 - Hall Sensor system
- Pushbutton Switches
- Relay SCA Open
- Relay SCA Close

SCA Assembly

Prior to this change, a micro-switch located in the upper lift-gate was used to provide the status of the lift-gate to the GM3 body electronics control module. For the 10/03 facelift, the micro-switch has been replaced with Hall Sensors for greater reliability. The hall sensors report the status of the lift-gate to the GM3. The GM3 responds to the status signals and provides the outputs to the relays that control the SCA motor. The GM3 also uses these input signals to control the upper hatch luggage compartment lights and to trigger the DWA anti-theft alarm.

Pushbutton Switches

The upper and lower lift-gates can be opened electrically in the same manner as before by using the respective switches in the upper and lower lift-gate. Additionally, the upper lift-gate can be opened using the center console switch, or the remote key.

The pushbutton switches for the upper lift-gate must be pressed for at least 200 ms in order for an electrical opening of the upper hatch to be initiated.

The SCA motor is not activated if the battery voltage is lower than 9 volts. In a crash situation (crash telegram generated), the lift-gate opening function is blocked for 10 seconds for additional safety.

Relay SCA Open

The GM3 controls the SCA Open relay K112 by applying a ground signal to the relay coil, which switches KL30 voltage to the motor.

Relay SCA Close

The GM3 controls the SCA Close relay K70 by applying a ground signal to the relay coil, which switches KL30 voltage to the motor pulling the liftgate closed.

SCA Functions

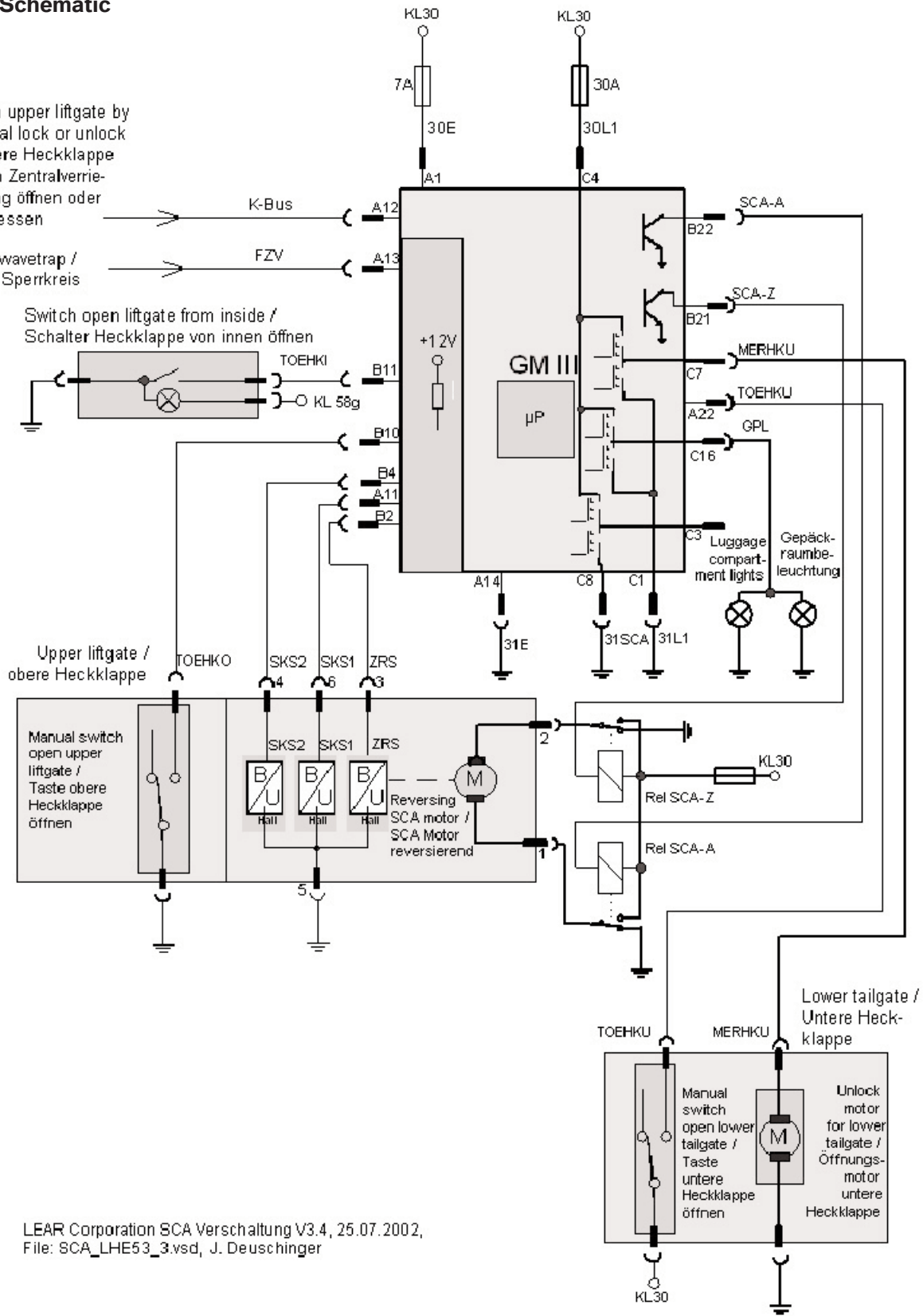
- Disabling of liftgate operation while vehicle is moving
- Disabling of liftgate for 10s following a crash
- Opening of the upper liftgate from the outside/inside electrically via a pushbutton (minimum actuation duration 200 ms) and remote control.
- Opening the lower liftgate via pushbutton on the lower liftgate.
- Dimmed activation and deactivation of the interior lighting and luggage compartment lighting via the body electronics control module.
- The Pawl Sensor is an anti-theft alarm system trigger.
- Activation of the SCA motor in order to automatically close the SCA latch into the primary position after engagement in the secondary position by means of the “pull-closed” function.
- Activation of the SCA motor must occur in order to open the SCA latch when the vehicle is at a standstill.
- Activation of the SCA motor via two relays, activation of the lower liftgate motor and the luggage compartment light directly via the GM3RD

SCA Schematic

Open upper liftgate by central lock or unlock / Obere Heckklappe durch Zentralverriegelung öffnen oder schliessen

from wavetrapp / vom Sperrkreis

Switch open liftgate from inside / Schalter Heckklappe von innen öffnen

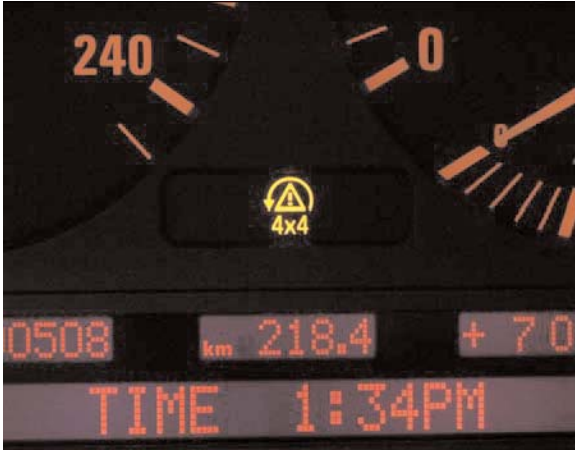


LEAR Corporation SCA Verschaltung V3.4, 25.07.2002, File: SCA_LHE53_3.vsd, J. Deuschinger

Instrument Cluster

Soft ware and hardware have been updated.

The “Check Gas Cap” CC message and the DCX icon have been added.



MFL



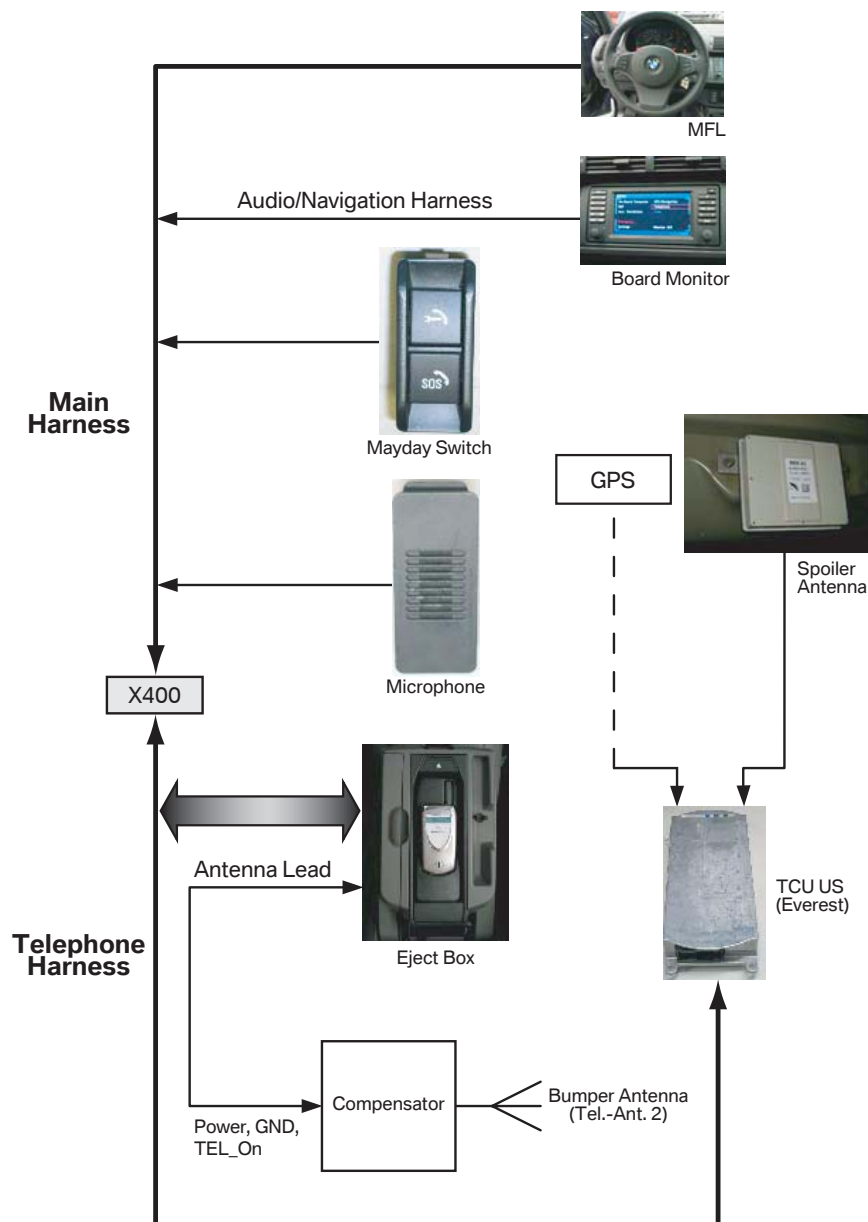
Communication Systems

The Navigation System, Business Radio and DSP Amplifier all have revised software and hardware. While the changes internally may be dramatic, there will be no apparent change to the customer.

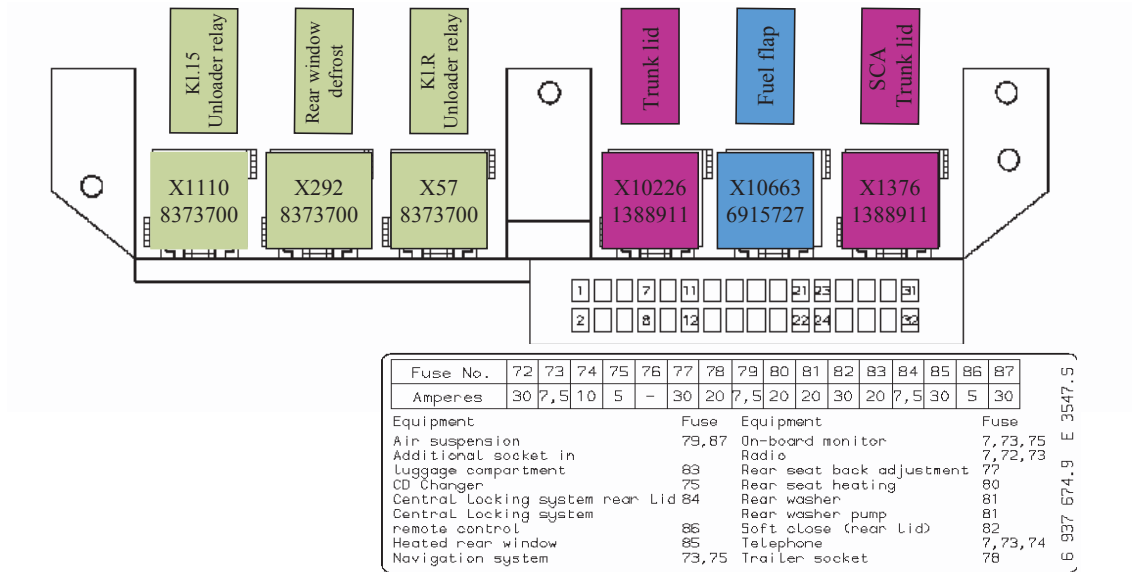
Telephone System

The X5 FL now include a TCU as standard equipment. Operation of the system is the same as E65/E60 equipped with the Everest Platform.

Installation of the eject box, cell phone antenna and compensator will be performed at the dealership.



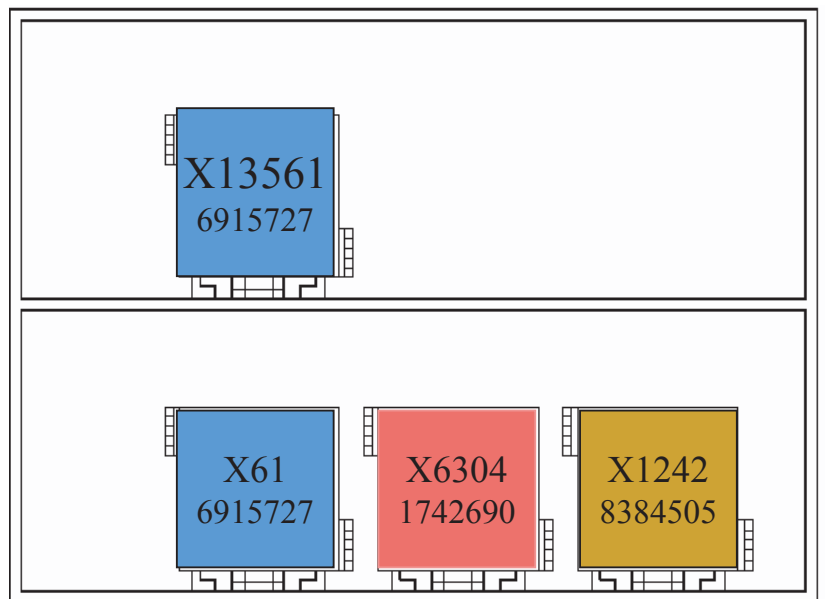
Fuse and Relay Carrier Layout



Relay Schematic E Box

- X 61** High pressure headlight cleaning
- X66** KL.50
- X1242** wiper module
- X6304** secondary air pump

← Driving direction



Control Module and Relay Carrier

GM III # 6935890-01
HW 2.5 SW 3.1

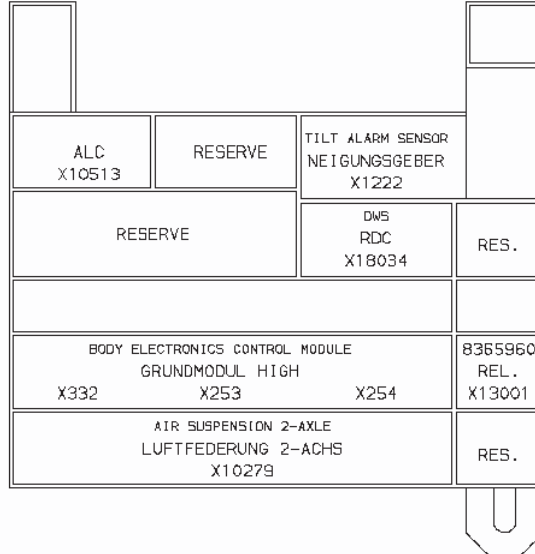
RDC # 6759023-01
HW 2 SW 10
CI 1 DI 2 BI 8

2-axle air suspension # 6758452-01
HW 20 SW 30

DWA tilt alarm sensor # 6923209-0
HW 04 SW 16

Sleep current relay # 8365960-01

ALC
Part of the 04_2004 package



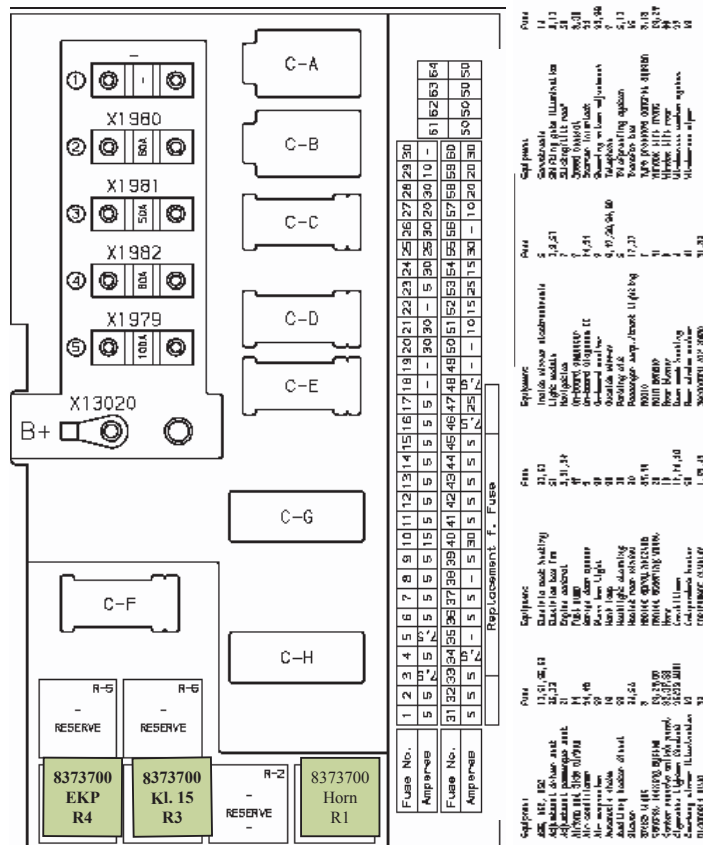
Power Distribution and Relay Carrier

R1
Relay Horn
8373700

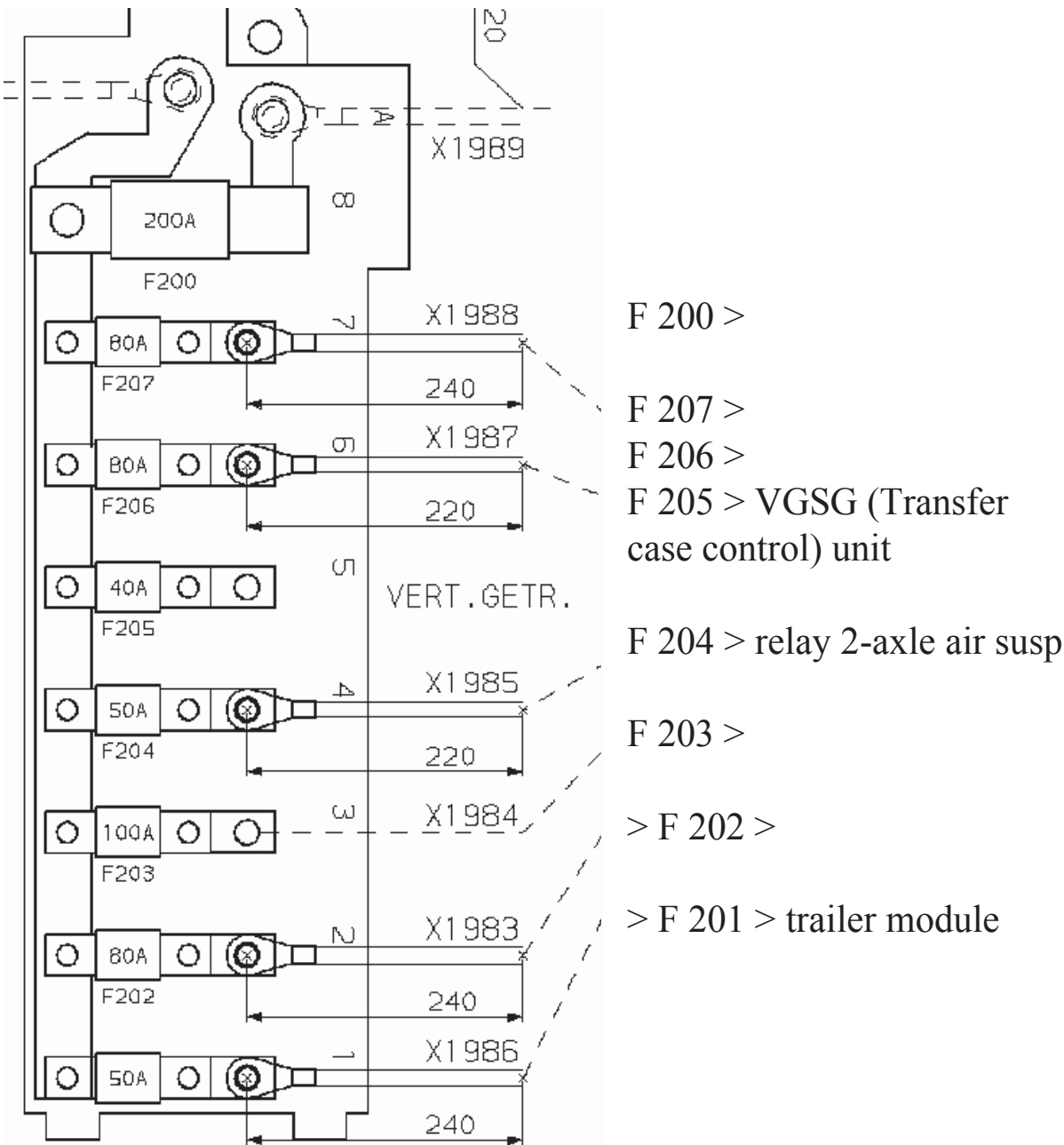
R2
Reserve

R3
Relay Kl.15
8373700

R4
Relay fuel
Pump
8373700



Power Distribution in Relay Box



Components for US Telephone



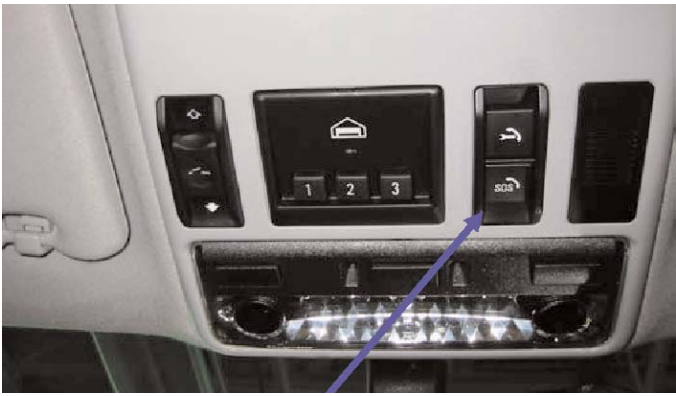
Oddiments Tray



Spoiler Antenna



TCU



Emergency Call Button



Voice Recognition Jumper